

Developing CWA 319 Work Plans

Project Goals & Objectives

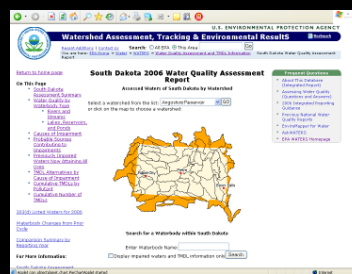
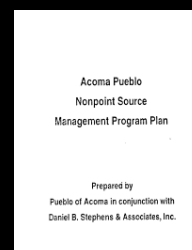
Barry Tinning

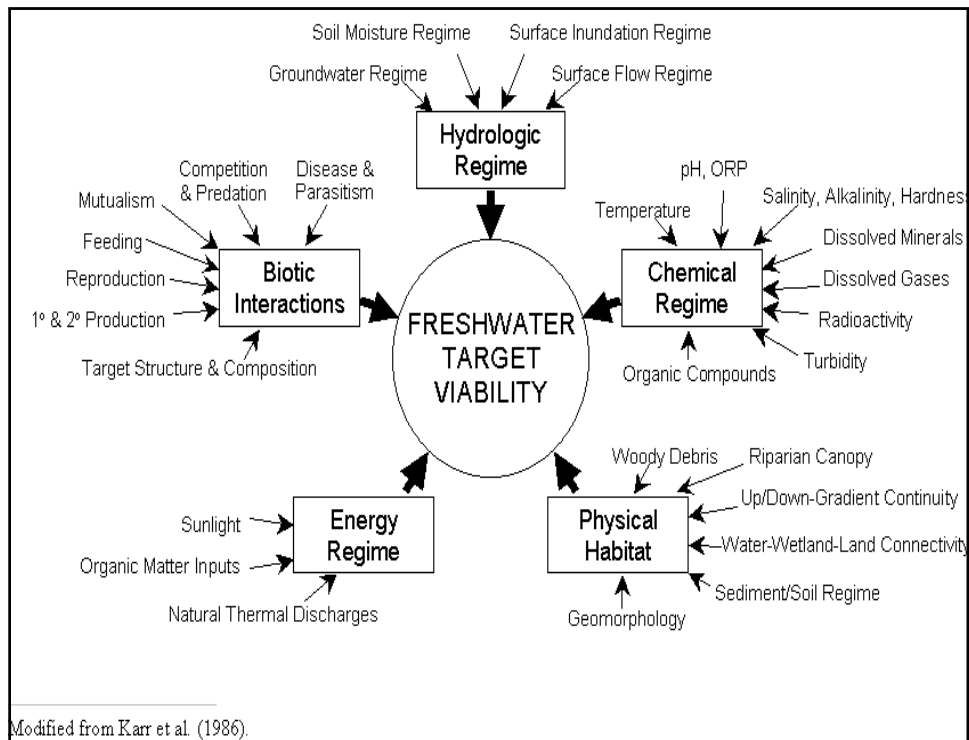


Tetra Tech

Selecting the Waterbody

- Which river, stream, lake, or wetland do you want to focus on?
 - Do you have any assessment or monitoring data?
 - What do the data say?
 - How sure are you?





Project Location and Activities

- Where are the most problems coming from?
 - How do you know?
 - Monitoring data
 - Walking survey
 - Other assessments
- What sort of management practice(s) might address the problem(s)?
 - How do you know?
 - Local info, literature approaches
 - Can it work here?
 - Local ability to implement
 - Local acceptance



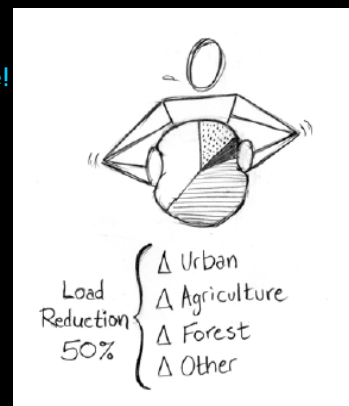
Management Practices

- List possible management practices
- Determine appropriateness
- Identify most likely candidates
- Consider cost, effectiveness
- Select preferred BMPs



Proposed management measures

- Pollutant reductions needed
 - Estimate quantitatively if possible
 - Measurements selected should make sense!
- BMP types proposed
 - What will lessen your 'loads'?
 - Applicable to your situation?
- BMP performance
 - How can you measure BMP impacts?
 - Use literature or actual values
- BMP installation sites
 - Which sites will hit the source(s)?
 - Are there critical areas to focus on?

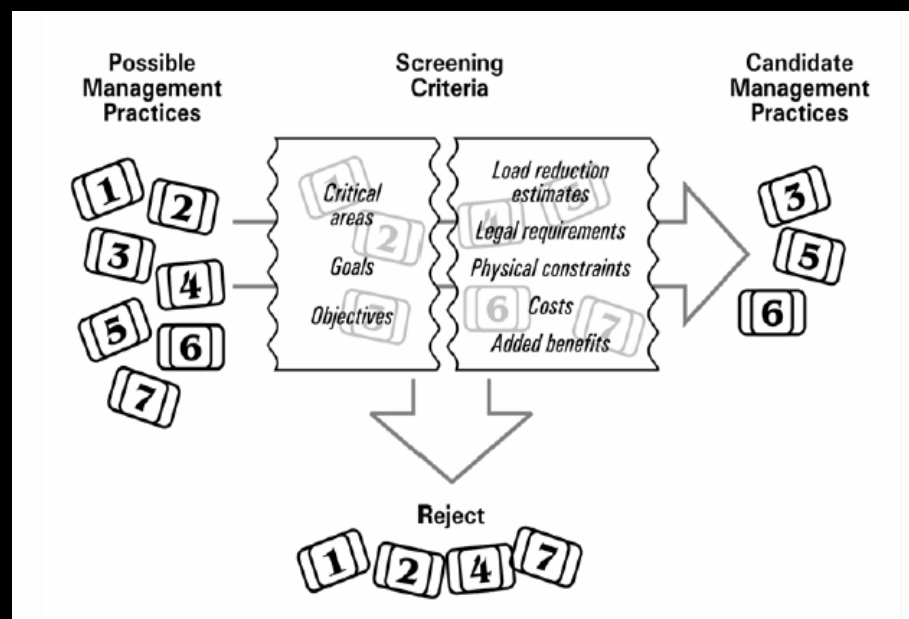


Examples of Different Scenarios to Meet the Same Load Target

Source	Existing Phosphorus Loading (kg/y)	Scenario 1		Scenario 2	
		% Load Reduction	Allowable Load (kg/y)	% Load Reduction	Allowable Load (kg/y)
Roads	78	26	58	20	62
Pasture/Hay	21	26	16	10	19
Cropland	218	26	162	55	98
Forest	97	26	72	0	97
Landfill	7	26	5	0	7
Residential	6	26	5	0	6
Groundwater	111	26	83	0	111
Total	539	26	400	26	400

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Identify candidate practices



Selecting/prioritizing/targeting BMPs

- Importance of waterbody
 - Drinking water source, recreational resource
- Magnitude of impairment(s)
 - Level of effort needed; public interest/attention
- Existing loads (stressors & sources)
 - Magnitude, spatial variation, clustering
- Ability of BMPs to reduce loads
 - Sure thing, or a shot in the dark?
- Feasibility of implementation
 - Willing partners? Public support? Access?
- Additional benefits
 - Recreational enhancements, demonstration



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References for determining BMP effectiveness

- Stormwater/Urban (BMP Effectiveness database; Menu of BMPs)
- Agriculture (Ag Management Measure document)
- Forestry (Forestry Management Measures document)
- Mining (Development document for proposed Effluent Guideline for Mining)



www.epa.gov/nps

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www.epa.gov/owow/nps/agmm/index.html

The screenshot shows the EPA website page titled "Polluted Runoff (Nonpoint Source Pollution)". The page is part of the "National Management Measures to Control Nonpoint Source Pollution from Agriculture" document. It includes a sidebar with navigation links such as "What is NPS Pollution", "NPS Categories", "Publications & Info Resources", "Education Resources", "Funding", "Outreach", "CWA Section 319", "CZARA Section 6217", "State-EPA NPS Partnership", "Training Meetings", and "Polluted Runoff For Kids!". The main content area features a "Table of Contents" with links to various chapters and sections, including "Cover Pages", "Disclaimer, Acknowledgements, Table of Contents, List of Figures and Tables", "Chapter 1: Introduction", "Chapter 2: Overview", "Chapter 3: Management Practices", "Chapter 4: Management Measures", "Chapter 5: Using Management Measures to Prevent and Solve Nonpoint Source Problems in Watersheds", "Chapter 6: Monitoring and Tracking Techniques", "Chapter 7: Load Estimation Techniques", "Chapter 8: Glossary", "Chapter 9: References", and "Chapter 10: Appendix". A note at the bottom states: "You will need Adobe Acrobat Reader to view the Adobe PDF files on this page. See EPA's PDF page for more information about getting and using the free Acrobat Reader."

<http://www.glti.nrcs.usda.gov/>

The screenshot shows the NRCS Grazing Lands website. The header includes the "United States Department of Agriculture" logo and the "Natural Resources Conservation Service" name. The main content area is titled "Welcome to NRCS Grazing Lands" and features three featured articles: "TH 190 RP 1: 'PROFITABLE GRAZING-BASED DAIRY SYSTEMS'", "Interpreting Indicators Rangeland Health - Version 4", and "National Range and Pasture Handbook - Revision 1". The sidebar on the left contains a "Quick Access" section with links to "Grazing Lands", "Personal Directory", "Electronic Government", "Employment", "Farm Bill", "Grazing Lands Resource Program", "Grazing Lands Conservation Initiative", "GLT Forum", "Legislative", "HISPA", "Site Map", "Photo Gallery", "Publications", "Software", and "Tools". The footer includes the text: "The Natural Resources Conservation Service provides leadership in a partnership effort to help ranches conserve, maintain, and improve our..."

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<http://www.epa.gov/agriculture/anafobmp.html>

www.epa.gov/owow/nps/agmm/index.html

Table 4d-6. Relative gross effectiveness* (load reduction) of animal feeding operation control measures (Pennsylvania State University, 1992b).

Practice ^b Category	Runoff Volume	Total ^d Phosphorus (%)	Total ^d Nitrogen (%)	Sediment (%)	Fecal Coliform (%)
Animal Waste Systems ^a	reduced	90	80	60	85
Diversion Systems ^f	reduced	70	45	NA	NA
Filter Strips ^g	reduced	85	NA	60	55
Terrace System	reduced	85	55	80	NA
Containment Structures ^h	reduced	60	65	70	90

NA = not available.

^a Actual effectiveness depends on site-specific conditions. Values are not cumulative between practice categories.

^b Each category includes several specific types of practices.

^d Total phosphorus includes total and dissolved phosphorus; total nitrogen includes organic-N, ammonia-N, and nitrate-N.

^e Includes methods for collecting, storing, and disposing of runoff and process-generated wastewater.

^f Specific practices include diversion of uncontaminated water from confinement facilities.

^g Includes all practices that reduce contaminant losses using vegetative control measures.

^h Includes such practices as waste storage ponds, waste storage structures, waste treatment lagoons.

<http://www.epa.gov/owow/nps/forestrymgmt>



Asking the right questions . . .

- Who can help implement the BMPs or controls?
 - Agencies, businesses, non-profits, citizens, producers
- How can they be implemented?
 - What has been done in the past?
 - How well did it work?
 - Can we do it (or adapt it) here?
- When can we get started?
 - Reasonable short-term actions
 - Long-term or major actions
- How do we know if it's working?
 - And what do we do if it's not?



Estimate technical and financial assistance needed

- Funding sources
 - Grants, contracts, donations
 - Supplemental Env. Projects
- Sources of technical assistance
 - Internal and external
 - Design/engineering services
 - Volunteer & other groups
- Regulatory or other authority
 - Health dept. planning/zoning
 - WHPP, SWPP, etc.
- Matching support sources
 - Outreach & education support
 - Be creative!



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Develop a reasonably expeditious project schedule



- Who's going to do something?
- What are they going to do?
- Where will they do it?
- When will they do it?
- How will they do it?
- *Lots of detail for the short term*
- *Less detail for long-term projects*

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Establish indicators & targets for management objectives

INDICATOR = measurable parameter used to evaluate relationship between pollutant sources and environmental conditions

TARGET = value of indicator that is set as the goal to achieve



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Other types of indicators

- Environmental Indicators:
 - # of occurrences of algal blooms
 - miles of streambank restored or fenced off
 - % increase in "healthy-stream" critters
 - Increase in DO
 - # of waterbodies restored
- Administrative/programmatic indicators
 - # of BMPs installed
 - # of newspaper stories printed
 - # of people educated/trained
 - # of public meetings held
 - # of volunteers attending activities
 - # of storm drains stenciled



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What should we monitor?

- Indicators that:
 - Characterize the watershed
 - Define and/or refine your understanding of the problem(s), such as water quality criteria violations, etc.
 - Show changes in targeted water quality or habitat conditions
 - Efficiently provide effective management information



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Indicators & targets: short/long term

Worksheet 12-2

Developing Criteria to Measure Progress in Meeting Water Quality Goals

[Note: Complete one worksheet for each management objective identified.]

Management Objective: Reduce nutrient inputs into Cane Creek by 20 percent

Indicators to Measure Progress	Target Value or Goal	Interim Targets		
		Short-term	Medium-term	Long-term
P load	44 t/yr	52 t/yr	49 t/yr	44 t/yr
# of nuisance algae blooms	0	2	1	0
transparency	5.5 m	4.1 m	4.9 m	5.5 m
frequency of taste and odor problems in water supply	0	1	1	0
hypolimnetic DO	5.0 mg/L	2.5 mg/L	4.0 mg/L	5.0 mg/L

During implementation, remember:

- Plans are guides, not straitjackets
- Be aware of unforeseen opportunities
- Picking the low-hanging fruit is easy, but it helps to build a sense of progress & momentum
- If possible, work quietly for as long as you can on the most contentious issues



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